TOWN OF WATERTOWN
CONTRIBUTORY RETIREMENT SYSTEM

Actuarial Valuation Report

January 1, 2006

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Report Summary:

Highlights	January 1, 2004	January 1, 2006
Contributions		
Funding Schedule FY 2007	$6,770,135	$6,770,135
Funding Schedule FY 2008	6,942,163	7,276,020
Funded Ratios		
GAS No. 25	60.1%	59.3%
Participants		
Actives	522	514
Retirees and Beneficiaries	361	344
Vested	0	0
Inactives	157	157
Disabled	82	75
Total	1,122	1,090
Payroll		
Payroll of Active Members	$21,673,650	$22,327,190
Average Payroll	41,520	43,438
Normal Cost		
Employer	1,214,111	1,329,761
Employee	1,786,702	1,828,884
Administrative Expenses	200,000	220,000
Total	3,200,813	3,378,645
Actuarial Accrued Liabilities		
Actives	47,341,065	55,079,082
Retirees, Beneficiaries, Disabilities and Inactives	72,515,393	75,405,759
Total	120,699,469	130,484,841
Actuarial Value of Assets	72,563,856	77,395,170
Unfunded Actuarial Accrued Liabilities	$48,135,613	$53,089,671

Introduction

This report presents the findings of an actuarial valuation as of January 1, 2006, of Watertown Contributory Retirement System.

The actuarial valuation is based on:

- Provisions Chapter 32 of the Massachusetts General Laws, "M.G.L", as of January 1, 2006.
- Employee data provided by the Retirement Board
- Asset information reported to the Public Employee Retirement Administration Commission by the Town of Watertown Contributory Retirement System
- Actuarial assumptions approved by the Retirement Board

The valuation and appropriation forecast are prepared in accordance with Chapter 32 of the M.G.L. as of January 1, 2006.

The valuation and forecast do not account for:

- Any subsequent changes in the law
- Chapter 32 of the M.G.L., Section 3(8)(c) transfers between systems
- State-mandated benefits
- Cost-of-living increases granted to retired members between 1982 and 1997. The cost of these benefits has been assumed by the State under Proposition Two and One-Half.

Actuarial Experience

In performing the actuarial valuation, various assumptions are made regarding such factors as mortality, retirement, disability, and withdrawal rates as well as both payroll, salary increases, and investment returns. A comparison of the current valuation and the prior valuation is made to determine how closely actual experience corresponded to anticipated occurrences. This analysis of the system provides insight into the overall quality of the actuarial assumptions and helps explain any change in the annual appropriation.

During the preceding two years, the total unfunded actuarial accrued liability increased by 5% to $53,089,671. The increase is the result of net unfavorable actuarial experience during the preceding years. The actuarial value of assets for 2004 and 2005 had a return of 3.7% and 5.3%, respectively. The sources of the (gain)/loss are as follows:

Investment	5,139,525
Salary Gain	(3,457,174)
Retiree Mortality Loss	2,237,044
Active Decrements (Termination)	(147,232)
Active Decrements (Disability)	318,430
Active Decrements (Retirement)	(534,793)
Active Decrements (Death)	237,653
New Entrants	576,607
Section 90 A/C	1,115,055
Other (Data corrections, Section 3(8)(c), software etc.)	1,206,996
Total (gain)/loss	6,692,111

Actuarial Costs and Liabilities:

Normal Costs

The normal cost is the sum of the individual normal costs determined for each member as if the assumptions underlying the cost determinations had been exactly realized. An individual normal cost represents that part of the cost of a member's future benefits which are assigned to the current year as if the costs are to remain level as a percentage of the member's pay. Benefits payable under all circumstances (i.e., retirement, death, disability, and terminations) are included in this calculation. Anticipated employee contributions to be made during the year are subtracted from the total normal cost to determine employer normal cost. The total normal cost is divided by total payroll to determine the normal cost as a percent of pay. The normal cost is shown in Table I.

Table I

	January 1, 2004	January 1, 2006
Superannuation	$2,067,779	$2,169,749
Termination	237,832	266,880
Death	134,184	155,434
Disability	561,018	566,582
Administrative Expenses	200,000	220,000
Total Normal Cost	3,200,813	3,378,645
% of Pay	14.8%	15.1%
Employee Contributions	1,786,702	1,828,884
% of Pay	8.2%	8.2%
Employer Normal Cost	$1,414,111	$1,549,761
% of Pay	6.5%	6.9%

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Present Value of Actuarial Accrued Liabilities

The actuarial accrued liabilities (AAL) represents today's value of all benefits earned by the actives and inactives. The AAL can be compared to the assets to determine the funded status of the Plan. The value of these earned benefits is shown in Table II below.

Table II

	January 1, 2004	January 1, 2006
Actives		
Superannuations	$43,545,985	$48,077,381
Termination	(726,704)	914,311
Death	1,177,681	1,773,757
Disability	3,344,103	4,313,633
Retirees and Inactives		
Retirees and Beneficiaries	58,078,348	58,835,506
Vested	0	0
Terminated (Refund)	843,011	1,141,716
Disabled	14,437,045	15,428,537
Total	$120,699,469	$130,484,841

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Present Value of Future Benefits

The present value of future benefits represents today's value of all benefits earned by the inactive participants as well as all benefits earned and expected to be earned in the coming years by the active participants. The difference betwee the present value of future benefits and the present value of actuarial accrued liabilities is the value of benefits to be earned in the coming years. The value of the total expected benefits is shown in Table III.

Table III

	January 1, 2004	January 1, 2006
Actives		
Superannuation	$64,336,442	$69,701,192
Termination	1,652,026	2,014,680
Death	2,485,041	3,200,216
Disability	8,893,308	10,488,360
Retirees and Inactives		
Retirees and Beneficiaries	58,078,348	58,835,506
Vested	0	0
Terminated (Refund)	843,011	1,141,716
Disabled	14,437,045	15,428,537
Total	$150,725,221	$160,810,207

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Funded Status and Appropriations:

Market Value of Plan Assets

The trust fund composition on a market value basis is shown in Table IV.

Table IV

	January 1, 2004	January 1, 2006
Cash equivalents	$219,339	$69,969
Short term investments	512,908	269,267
Fixed income securities	20,132,028	20,235,860
Equities	30,514,183	31,088,121
International	9,662,194	12,227,573
Real Estate	4,810,349	5,946,092
Venture Capital	0	0
Other	1,674,135	2,096,970
Accounts receivable	123,812	6,200,780
Accounts payable	(8,637)	(4,560)
Accrued income	36,775	43,173
Total Market Value	$67,677,086	$78,173,247
Total Actuarial Value	$72,563,856	$77,395,170

P:\Actrl\Watertown\Val06\[WatAssets06.xls]Table V

Actuarial Value of Assets

The actuarial value of assets is determined by projecting the market value of assets as of the beginning of the prior plan year with the assumed rate of return during that year (8.0%) and accounting for deposits and disbursements with interest at the assumed rate of return. An adjustment is then applied to recognize the difference between the actual investment return and expected return over a five year period. This preliminary actuarial value is not allowed to differ from the market value of assets by more than 10%. The calculation of the actuarial value of assets as of January 1, 2006 is presented in Table V.

Table V

		January 1, 2006
(1)	Market value at January, 1, 2005	$73,959,547
(2)	2005 Contributions	9,509,724
(3)	2005 Benefit payments	(9,865,247)
(4)	Net interest adjustment at 8.0% on (1), (2), and (3) to December 3	5,902,543
(5)	Expected market value on January, 1, 2006 (1) + (2) + (3) + (4)	$79,506,567
(6)	Actual market value on January, 1, 2006	$78,173,247
(7)	2005 Loss	1,333,320
(8)	80% of 2005 loss	1,066,656
(9)	2004 Gain	(2,242,594)
(10)	60% of 2004 gain	(1,345,557)
(11)	2003 Gain	(7,208,888)
(12)	40% of 2003 gain	(2,883,555)
(13)	2002 Loss	11,921,894
(14)	20% of 2002 loss	2,384,379
(15)	Actuarial value on January, 1, 2006 (6) + (8) + (10) + (12) + (14) but not less than 90% or more than 1	$77,395,170
(16)	Ratio of actuarial value to market value	99.00%
(17)	2004 Market Value Return on Assets	11.3%
(18)	2004 Actuarial Value Return on Assets	3.7%
(19)	2005 Market Value Return on Assets	6.2%
(20)	2005 Actuarial Value Return on Assets	5.3%

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Unfunded Actuarial Accrued Liabilities

Under the Entry Age Normal Actuarial Cost Method, the Actuarial Accrued Liability represents what the accumulated assets would have been as of the valuation date if:

- current plan provisions and assumptions had always been in effect,
- experience conformed exactly to assumptions, and
- the normal cost had been contributed each year since inception.

The actuarial value of the Fund's assets as of the end of the prior year are subtracted from the Actuarial Accrued Liability (AAL) to determine the Unfunded Actuarial Accrued Liability (UAAL) as of the valuation date. Over time, annual pension contributions will accumulate Plan assets equal to the AAL, and the UAAL will be eliminated. Thereafter, annual contributions equal to the normal cost will keep the Plan's assets and liabilities in balance. The UAAL is developed in Table VI.

Table VI

	January 1, 2004	January 1, 2006
Actuarial Accrued Liability	$120,699,469	$130,484,841
Actuarial Assets	72,563,856	77,395,170
Unfunded Actuarial Accrued Liability	$48,135,613	$53,089,671
Funded Status	60.1%	59.3%

Appropriations

The pension appropriation for the upcoming fiscal years have been calculated in accordance with the requirements set forth in Section 22D of Chapter 32 of the Massachusetts General Laws. These amounts were calculated to comply with the June 30, 2028, full funding mandate for all accrued liabilities. The pension appropriation is the sum of the:

- Employer normal cost,
- Increasing amortization of the prior unfunded actuarial accrued liability by June 30, 2019
  $ 52,827,940 over 13 years with 4.0% increasing payments
- Level amortization of the Early Retirement Incentive by June 30, 2008
  $ 261,731 over 2 years
- Interest adjustment for payments deposited at the beginning of the fiscal year.

The pension appropriation is shown in Table VII.

Table VII

	January 1, 2004	January 1, 2006
Normal cost	$1,455,527	$1,549,761
Amortization payment of the unfunded liability	4,648,330	5,045,933
Amortization payment of 1992 ERI liability	135,899	135,899
Total cost	$6,239,756	$6,731,593
% of Pay	28.8%	30.1%
Fiscal 2007 cost	$6,770,135	$6,770,135
Fiscal 2008 cost	$6,942,163	$7,276,020

Appropriation Forecast

The following exhibit forecasts employer and employee contributions over the next 32 years under the adopted funding schedule.

Note that the forecast is based upon an "open group" method. This method assumes that sufficient employees will be hired each year to keep the number constant. The total payroll of the system is expected to increase 4.5% per year. The employee contribution rate is expected to increase to 10.5% by 2028 as members contributing base percentages 5%, 7%, and 8% are replaced by new members, whose base contribution is 9%. Payments are assumed to be made at the beginning of the year.

The employer total cost is expected to increase during the next 13 years until the unfunded liabilities are completely paid off, at which time only the normal cost will remain. The total cost represents 30.3% of payroll, increasing to 31.2% for FYE 2008, decreasing to 28.1% by the time the unfunded liabilities are fully paid off, leaving only a normal cost of 5.7% thereafter. The decrease in the cost as a percentage of payroll is a result of the increase in member deductions.

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Appropriation Forecast

Fiscal Year Ending	Payroll*	Employee Contribution	Employer Normal Cost with Interest	Amortization Payments with Interest	Employer Total Cost with Interest	Employer Total Cost % of Payroll	Funded Ratio %**
2007	$22,327,190	$1,828,884	$1,610,559	$5,159,576	$6,770,135	30.3	59.3
2008	$23,331,914	$1,936,835	$1,656,377	$5,619,643	$7,276,020	31.2	61.6
2009	$24,381,850	$2,050,797	$1,703,057	$5,697,550	$7,400,607	30.4	64.1
2010	$25,479,033	$2,171,094	$1,750,585	$5,925,452	$7,676,037	30.1	66.6
2011	$26,625,589	$2,298,066	$1,798,941	$6,162,470	$7,961,411	29.9	69.4
2012	$27,823,741	$2,432,068	$1,848,104	$6,408,969	$8,257,073	29.7	72.2
2013	$29,075,809	$2,573,476	$1,898,049	$6,665,327	$8,563,376	29.5	75.2
2014	$30,384,221	$2,722,687	$1,948,747	$6,931,941	$8,880,688	29.2	78.3
2015	$31,751,511	$2,880,115	$2,000,164	$7,209,218	$9,209,382	29.0	81.6
2016	$33,180,329	$3,046,198	$2,052,262	$7,497,587	$9,549,849	28.8	85.0
2017	$34,673,443	$3,221,396	$2,104,999	$7,797,490	$9,902,489	28.6	88.5
2018	$36,233,748	$3,406,194	$2,158,326	$8,109,390	$10,267,716	28.3	92.2
2019	$37,864,267	$3,601,100	$2,212,190	$8,433,766	$10,645,956	28.1	96.0
2020	$39,568,159	$3,806,651	$2,266,531	$0	$2,266,531	5.7	100.0
2021	$41,348,726	$4,023,408	$2,321,284	$0	$2,321,284	5.6	100.0
2022	$43,209,419	$4,251,966	$2,376,374	$0	$2,376,374	5.5	100.0
2023	$45,153,843	$4,492,946	$2,431,722	$0	$2,431,722	5.4	100.0
2024	$47,185,766	$4,747,004	$2,487,239	$0	$2,487,239	5.3	100.0
2025	$49,309,125	$5,014,829	$2,542,828	$0	$2,542,828	5.2	100.0
2026	$51,528,036	$5,297,145	$2,598,383	$0	$2,598,383	5.0	100.0
2027	$53,846,797	$5,594,715	$2,653,790	$0	$2,653,790	4.9	100.0
2028	$56,269,903	$5,908,340	$2,708,921	$0	$2,708,921	4.8	100.0
2029	$58,802,049	$6,174,215	$2,830,822	$0	$2,830,822	4.8	100.0
2030	$61,448,141	$6,452,055	$2,958,209	$0	$2,958,209	4.8	100.0
2031	$64,213,307	$6,742,397	$3,091,329	$0	$3,091,329	4.8	100.0
2032	$67,102,906	$7,045,805	$3,230,439	$0	$3,230,439	4.8	100.0
2033	$70,122,537	$7,362,866	$3,375,808	$0	$3,375,808	4.8	100.0
2034	$73,278,051	$7,694,195	$3,527,720	$0	$3,527,720	4.8	100.0
2035	$76,575,563	$8,040,434	$3,686,467	$0	$3,686,467	4.8	100.0
2036	$80,021,464	$8,402,254	$3,852,358	$0	$3,852,358	4.8	100.0
2037	$83,622,430	$8,780,355	$4,025,714	$0	$4,025,714	4.8	100.0
2038	$87,385,439	$9,175,471	$4,206,871	$0	$4,206,871	4.8	100.0

* Calendar basis

** As of beginning of the Fiscal Year

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GASB Statements No. 25 and No. 27

Effective for periods beginning after June 15, 1997, the Governmental Accounting Standards Board (GASB) requires the disclosure of pension related liabilities for public employer financial statements in accordance with Statements 25 and 27. These statements, which replace GASB Statement No. 5, must be adhered to by any public employee retirement system that follows Generally Accepted Accounting Principles (GAAP).

These disclosures are intended to establish a reporting framework that distinguishes between:

- current financial information about plan assets and financial activities,
- actuarially determined information from a long-term perspective,
- the funded status of the plan, and
- progress being made in accumulating sufficient assets to pay benefits when due.

Footnote disclosures required by GASB Statement No. 25 and 27 include a description of the plan, a summary of significant accounting policies, and information about contributions, legally required reserves, and investment concentrations. As a result of the oversight of the Public Employees Retirement Administration Commission (PERAC) and the conversion of unpaid contributions to pension related debt, the Net Pension Obligation (NPO) as required by Statement No. 27 will effectively always be equal to $0. The required disclosure information is shown in Table VIII.

Table VIII

		January 1, 2004	January 1, 2006
(1)	Actuarial Accrued Liability	$120,699,469	$130,484,841
(2)	Actuarial Value of Assets	72,563,856	77,395,170
(3)	Unfunded Actuarial Accrued Liability	48,135,613	53,089,671
(4)	Funded Ratio (2)/(1)	60.1%	59.3%
(5)	Covered Payroll	$21,673,650	$22,327,190
(6)	UAAL as a percentage of payroll: (3)/(5)	222.1%	237.8%
(7)	Annual Required Contribution (ARC)	$5,551,000	$6,770,135
(8)	Net Pension Obligation	$0	$0

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PERAC Annual Statement
APPENDIX PAGE 3
ACTUARIAL VALUATION AND ASSUMPTIONS

The most recent actuarial valuation of the System was prepared by Buck Consultants as of January 1, 2006.

The normal cost for employees on that date was:	$1,828,884	8.2% of pay
The normal cost for the employer was:	1,329,761	6.0% of pay

The actuarial liability for active members was:	$55,079,082
The actuarial liability for retired members was:	75,405,759
Total actuarial accrued liability:	130,484,841
System assets as of that date:	77,395,170
Unfunded actuarial accrued liability:	$53,089,671

The ratio of system's assets to total actuarial liability was 59.3%

The principal actuarial assumptions used in the valuation are as follows:

Investment Return:	8.0%
Rate of Salary Increase:	5.0%

SCHEDULE OF FUNDING PROGRESS

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (b)	Unfunded Actuarial Accrued Liability (b-a)	Funded Ratio (a/b)	Covered Payroll (c)	UAAL as a percent of Covered Payroll (b-a)/c
01/01/06	$77,395,170	$130,484,841	$53,089,671	59.3%	$22,327,190	237.8%
01/01/04	72,563,856	120,699,469	48,135,613	60.1%	21,673,650	222.1%
01/01/02	70,633,407	111,494,385	40,860,978	63.4%	19,735,159	207.0%
01/01/01	66,804,435	100,876,281	34,071,846	66.2%	19,379,204	175.8%
01/01/00	67,485,797	93,900,795	26,414,998	71.9%	18,231,939	144.9%
01/01/99	56,172,432	90,052,933	33,880,501	62.4%	15,732,197	215.4%

Attach Copy of Current Approved Funding Schedule

EXHIBITS

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Age/Service Distribution with Salary as of January 1, 2006

Attained Age	Average Salary <5	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	Total
< 20	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
20-24	8	0	0	0	0	0	0	0	0	8
	35,031	0	0	0	0	0	0	0	0	35,031
25-29	28	4	0	0	0	0	0	0	0	32
	35,146	49,426	0	0	0	0	0	0	0	36,931
30-34	34	18	1	0	0	0	0	0	0	53
	42,397	55,722	57,120	0	0	0	0	0	0	47,200
35-39	17	18	10	2	0	0	0	0	0	47
	41,154	50,407	55,654	63,788	0	0	0	0	0	48,746
40-44	13	17	8	17	3	0	0	0	0	58
	25,177	46,347	44,263	59,269	47,209	0	0	0	0	45,146
45-49	23	20	18	16	11	1	0	0	0	89
	27,947	36,375	35,099	59,711	71,388	76,429	0	0	0	42,912
50-54	17	19	14	13	16	14	5	0	0	98
	26,005	28,816	37,027	53,432	64,582	79,275	64,500	0	0	47,635
55-59	6	21	4	11	9	9	5	5	0	70
	33,727	31,350	33,447	37,826	45,110	63,397	66,885	58,210	0	43,037
60-64	5	10	3	5	5	0	1	2	2	33
	25,149	37,994	28,844	32,417	33,728	0	61,642	66,590	41,608	36,393
65-69	2	4	2	3	2	2	0	0	1	16
	14,480	35,839	21,870	28,365	12,036	25,640	0	0	45,558	26,379
70+	0	2	0	3	0	3	1	1	0	10
	0	35,993	0	39,070	0	14,910	42,670	54,350	0	33,095
Total Employees	153	133	60	70	46	29	12	8	3	514
Average Salary	33,821	40,786	39,700	50,937	55,628	63,892	63,436	59,823	42,925	43,438

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Retiree Distribution as of January 1, 2006

Attained Age	Number of Employees Male	Female	Total	Total Payments Male	Female	Total
< 20	0	0	0	0	0	0
20-24	0	0	0	0	0	0
25-29	0	0	0	0	0	0
30-34	0	0	0	0	0	0
35-39	0	0	0	0	0	0
40-44	0	0	0	0	0	0
45-49	1	0	1	14,914	0	14,914
50-54	1	0	1	19,266	0	19,266
55-59	19	5	24	761,569	53,646	815,215
60-64	32	10	42	1,142,985	122,559	1,265,544
65-69	22	13	35	634,702	193,197	827,899
70-74	34	12	46	924,080	178,517	1,102,597
75-79	36	30	66	911,964	315,483	1,227,446
80-84	41	22	63	793,731	308,510	1,102,241
85-89	12	29	41	225,640	287,061	512,701
90-94	10	9	19	107,764	81,042	188,806
95-99	1	5	6	7,761	39,861	47,621
Total	209	135	344	5,544,374	1,579,876	7,124,250
Average (Age/Payment)	73.5	78.7	75.5	26,528	11,703	20,710
Frequency Percent	60.8	39.2	100	77.8	22.2	100

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Disabled Retiree Distribution as of January 1, 2006

	Number of Employees			Total Payments		
Attained Age	Male	Female	Total	Male	Female	Total
< 20	0	0	0	0	0	0
20-24	0	0	0	0	0	0
25-29	0	0	0	0	0	0
30-34	0	0	0	0	0	0
35-39	0	0	0	0	0	0
40-44	1	0	1	27,620	0	27,620
45-49	1	0	1	24,338	0	24,338
50-54	1	1	2	26,171	53,642	79,813
55-59	10	1	11	286,304	27,591	313,895
60-64	12	0	12	355,447	0	355,447
65-69	6	1	7	222,272	23,074	245,347
70-74	6	2	8	156,048	18,439	174,487
75-79	18	2	20	412,787	12,966	425,753
80-84	11	0	11	261,371	0	261,371
85-89	2	0	2	32,771	0	32,771
90-94	0	0	0	0	0	0
95-99	0	0	0	0	0	0
Total	68	7	75	1,805,129	135,712	1,940,840
Average (Age/Payment)	70.2	69	70.1	26,546	19,387	25,878
Frequency Percent	90.7	9.3	100	93	7	100

EXHIBIT 4 - CASHFLOW FORECAST:

The following is a 30 year forecast of benefit payments net of state reimbursable COLA payments, Contribution Income and Investment Returns.

Plan Year Ending	Benefit Payments	Employee Contributions	Employer Contributions	Investment Returns	Net change in plan assets
2006	$9,179,480	$1,828,884	$6,770,135	$6,240,194	$5,659,733
2007	9,331,081	1,936,835	7,276,020	6,444,684	6,326,458
2008	9,499,429	2,050,797	7,400,607	6,945,998	6,897,973
2009	9,712,027	2,171,094	7,676,037	7,497,177	7,632,281
2010	9,997,421	2,298,066	7,961,411	8,104,601	8,366,657
2011	10,357,223	2,432,068	8,257,073	8,768,229	9,100,147
2012	10,710,297	2,573,476	8,563,376	9,491,190	9,917,746
2013	11,089,082	2,722,687	8,880,688	10,278,958	10,793,251
2014	11,461,197	2,880,115	9,209,382	11,137,456	11,765,756
2015	11,846,276	3,046,198	9,549,849	12,073,693	12,823,464
2016	12,266,937	3,221,396	9,902,489	13,093,619	13,950,567
2017	12,782,426	3,406,194	10,267,716	14,200,483	15,091,968
2018	13,298,892	3,601,100	10,645,956	15,399,135	16,347,299
2019	13,847,171	3,806,651	2,266,531	16,394,622	8,620,633
2020	14,351,457	4,023,408	2,321,284	17,065,029	9,058,264
2021	14,877,152	4,251,966	2,376,374	17,769,712	9,520,900
2022	15,335,584	4,492,946	2,431,722	18,514,157	10,103,241
2023	15,793,017	4,747,004	2,487,239	19,305,350	10,746,576
2024	16,229,624	5,014,829	2,542,828	20,148,958	11,476,991
2025	16,676,175	5,297,145	2,598,383	21,050,751	12,270,104
2026	17,084,809	5,594,715	2,653,790	22,017,632	13,181,328
2027	17,540,223	5,908,340	2,708,921	23,055,739	14,132,777
2028	17,956,704	6,174,215	2,830,822	24,169,129	15,217,462
2029	18,334,266	6,452,055	2,958,209	25,370,779	16,446,777
2030	18,612,496	6,742,397	3,091,329	26,674,629	17,895,859
2031	18,903,818	7,045,805	3,230,439	28,093,849	19,466,275
2032	19,138,040	7,362,866	3,375,808	29,640,897	21,241,531
2033	19,379,183	7,694,195	3,527,720	31,329,644	23,172,376
2034	19,548,077	8,040,434	3,686,467	33,175,644	25,354,468
2035	20,204,181	8,402,254	3,852,358	35,177,046	27,227,476

amounts in thousands

EXHIBIT 5 – SUMMARY OF PLAN PROVISIONS:

This summary is prepared in accordance with Chapter 32 as of January 1, 2006, and does not take into account any subsequent changes.

1. Administration

Each of the 107 contributory retirement systems for public employees of the Commonwealth of Massachusetts are guided by the applicable provisions of Chapter 32 of the Massachusetts General Laws and other applicable statutes. Although these boards operate semi-independently, there is a uniform set of rules governing benefits, eligibility, contributions, financing, and accounting.

2. Participation

Participation is mandatory for all full-time employees whose employment commences prior to age 65. Eligibility with respect to part-time, professional, temporary, or intermittent employment is governed by the local board. Membership is optional for certain elected officials, State officials appointed by the Governor, and certain hospital interns.

There are four classes of membership as follows:

(i) Group 1: Most general employees in State and local government

(ii) Group 2: Certain specified hazardous duty positions

(iii) Group 3: State police officers and inspectors

(iv) Group 4: Local police officers, firefighters, and designated employees of the municipal light department.

For members in more than one group, participation will be proportional.

3. Salary

Salary is defined as gross regular compensation. Salary does not include bonuses, overtime, severance pay, unused sick leave credit, or other similar compensation.

4. Member Contributions

Member contributions vary depending upon date hired as follows:

Date of Hire	Member Contribution Rate
Prior to 1975	5.0% of Salary
1975 to 1983	7.0% of Salary
1984 to 1996	8.0% of Salary
1996 and Later plus	9.0% of Salary
1979 and Later	2.0% of Salary in excess of $30,000

5. Average Salary

Average salary is used to determine a participant's benefit. It is defined as the average salary during the three consecutive-year period that produces the highest average. (Alternatively, if a greater amount results, it is the average rate of salary earned during the period or periods, whether or not consecutive, that constitutes the last three years preceding retirement.)

6. Creditable Service

In general, creditable service is awarded during the period in which a member contributes to the retirement system.

7. <u>Service Retirement</u>

a. <u>Eligibility</u>:

For an employee to be eligible for service retirement (also referred to as superannuation), one of the following conditions must be met:

(i) completion of 20 years of service

(ii) for an employee hired prior to January 1, 1978, attainment of age 55 as an active member

(iii) for an employee hired on or after January 1, 1978, attainment of age 55 as an active member and completion of ten years of service

b. <u>Benefit Amount</u>:

The retirement allowance is determined as a product of the participant's Benefit Rate times Average Salary times Creditable Service, where Benefit Rate is determined from the following table:

Age at	Percentage of Average Salary		
Retirement	Group 1	Group 2	Group 4
65 or Over	.025	.025	.025
64	.024	.025	.025
63	.023	.025	.025
62	.022	.025	.025
61	.021	.025	.025
60	.020	.025	.025
59	.019	.024	.025
58	.018	.023	.025
57	.017	.022	.025
56	.016	.021	.025
55	.015	.020	.025
54	.014	.014	.024
53	.013	.013	.023
52	.012	.012	.022
51	.011	.011	.021
50	.010	.010	.020
49	.009	.009	.019
48	.008	.008	.018
47	.007	.007	.017
46	.006	.006	.016
45	.005	.005	.015
44	.004	.004	.004
43	.003	.003	.003
42	.002	.002	.002
41	.001	.001	.001

8. Deferred Vested Retirement

a. Eligibility:

A participant who has completed ten or more years of creditable service is eligible for a deferred vested retirement benefit. If termination is involuntary, the participant is vested after six years.

b. Benefit Amount:

The participant's accrued benefit is payable commencing at age 55, or may be deferred until later at the employee's option.

c. Refund of Contributions:

In lieu of the deferred pension benefit, a member may elect to receive a refund of their accumulated contributions. Members with ten or more years of service are entitled to 100% of the credited interest on their contributions. Members with five to ten years of service are entitled to 50% of the credited interest on their contributions. No credited interest is provided for members with less than five years of service.

9. Accidental Disability

a. Eligibility:

Participants are eligible for an accidental disability benefit, regardless of service or age, if they become permanently and totally incapacitated for further duty as a result of personal injury sustained while in the performance of duties.

b. Benefit Amount:

The accidental disability amount is 72% of annual salary plus $450 per year for each child plus an additional annuity based upon accumulated Member Contributions with credited interest.

10. Ordinary Disability

a. Eligibility:

An ordinary disability occurs when a member becomes permanently and totally disabled due to sickness or injury that is not job related. In order to be eligible for an ordinary disability benefit, a member must have ten years of service (and be less than age 55).

b. Benefit Amount:

The ordinary disability amount is equal to the accrued retirement benefit as if the member were age 55. If the member was a veteran, the benefit is 50% of the member's final rate of Salary during the preceding 12 months, plus an annuity based upon accumulated Member Contributions plus credited interest. If the participant is over age 55, he will receive not less than the superannuation allowance to which he is entitled.

11. Survivor Benefits

a. Occupational Death:

The survivors of a member who dies due to an occupational injury will be entitled to a lump sum return of contributions plus a pension benefit equal to 72% of the participant's annual Salary.

b. Non-Occupational Death:

Upon the death of a member other than due to an occupational injury, the designated beneficiary will be entitled to a retirement benefit as if Option C had been elected with a minimum of $250 per month to the surviving spouse, plus $120 for the first child, plus $90 for each additional child. If no beneficiary is designated and if the employee worked two years, and is married at least one year, the spouse may elect benefits. If there is no designated beneficiary or surviving spouse, then member contributions are returned. If there are dependent children but no surviving spouse, they may elect minimum survivor benefits of $250 per month plus $120 for the first child and $90 for each additional child.

c. Refund of Contributions:

Upon the death of a member not entitled to survivor benefits, the beneficiary is entitled to a refund of all member contributions with interest.

12. Cost-of-Living Increases

In accordance with the adoption of Chapter 17 of the Acts of 1997, the granting of a cost-of-living adjustment will be determined by an annual vote by the Retirement Board. The amount of increase will be based upon the Consumer Price Index, limited to a maximum of 3.0%, beginning on July 1. All retirees, disabled retirees, and beneficiaries who have been receiving benefits payments for at least one year as of July 1 are eligible for the adjustment. The maximum amount of pension benefit subject to a COLA is $12,000. All COLAs granted to members after 1981 and prior to July 1, 1998 are deemed to be an obligation of the State and are not the liability of the Retirement System.

13. Postretirement Death Benefits

Any benefits following the death of a member after retirement are based upon the form of benefit the participant elected at the time of retirement. There are three available forms as follows:

(i) Option A – Life annuity

(ii) Option B – Life annuity with death benefit equal to excess of member contributions plus credited interest to retirement over annuity benefit paid to member

(iii) Option C – Life annuity with 66-2/3% of benefit continued after death of member to designated joint annuitant

EXHIBIT 6 – ACTUARIAL METHODS AND ASSUMPTIONS:

The actuarial cost method, factors, and assumptions used in determining cost estimates are presented below.

1. **Member Data**

   The member data used in the determination of cost estimates consist of pertinent information with respect to the active, inactive, retired, and disabled members of the employer as supplied by the employer to the actuary.

2. **Valuation Date**

   January 1, 2006.

3. **Actuarial Cost Method**

   The costs of the Plan have been determined in accordance with the individual entry age normal actuarial cost method.

4. **Rate of Investment Return**

   It is assumed that the assets of the fund will accumulate at a compound annual rate of 8.0% per annum.

5. **Salary Scale**

   It is assumed that salaries including longevity will increase at a rate of 5% per year.

6. **Cost-of-Living Increases**

   Cost-of-living increases have been assumed to be 3.0% of the lesser of the pension amount and $12,000 per year.

7. **Value of Investments**

   Assets held by the fund are valued at market value as reported by the Public Employees'

Retirement Administration Commission (PERAC). The actuarial value of assets is determined using a five-year smoothing of asset returns greater than or less than the assumed rate of return.

8. Annual Rate of Withdrawal Prior to Retirement

Based on an analysis of experience, the assumed annual rates of withdrawal may best be illustrated by the following rates at the following ages:

Service	General Employees	Police and Fire Employees
0	0.1500	0.0150
10	0.0540	0.0150
20	0.0200	0.0000
30	0.0000	0.0000

9. Annual Rate of Mortality

It is assumed that both pre-retirement and post retirement mortality are represented by the RP-2000 Mortality Table for males and females. Mortality for disabled members is represented by the RP-2000 Mortality Table set forward two years for all disabled members.

10. Service Retirement

Based on an analysis of experience, the assumed annual retirement rates are illustrated at the following ages:

Age	Male General Employees	Female General Employees	Male and Female Police and Fire Employees
50	0.0100	0.0150	0.02000
51	0.0100	0.0150	0.02000
52	0.0100	0.0200	0.02000
53	0.0100	0.0250	0.05000
54	0.0200	0.0250	0.07500
55	0.0200	0.0550	0.15000
56	0.0250	0.0650	0.10000
57	0.0250	0.0650	0.10000
58	0.0500	0.0650	0.10000
59	0.0650	0.0650	0.15000
60	0.1200	0.0500	0.20000
61	0.2000	0.1300	0.20000
62	0.3000	0.1500	0.25000
63	0.2500	0.1250	0.25000
64	0.2200	0.1800	0.30000
65	0.4000	0.1500	1.00000
66	0.2500	0.2000	1.00000
67	0.2500	0.2000	1.00000
68	0.3000	0.2500	1.00000
69	0.3000	0.2000	1.00000
70	1.0000	1.0000	1.00000

11. Annual Rate of Disability Prior to Retirement

Based on an analysis of experience, the assumed annual rates of disability may best be illustrated by the following probabilities at the following ages:

Attained Age	General Employees	Police and Fire Employees
20	0.0001	0.0001
30	0.0003	0.0003
40	0.0010	0.0030
50	0.0019	0.0125

In addition, it is assumed for the general employees that 45% of all disabilities are ordinary (55% are service connected). For police and fire employees, 10% of all disabilities are assumed to be ordinary (90% are service connected).

12. Family Composition

It is assumed that 80% of all members will be survived by a spouse and that females (males) are three years younger (older) than members.

13. Administrative Expenses

The normal cost is increased by an amount equal to the anticipated administrative expenses for the upcoming fiscal year. The amount for fiscal year 2006 is $220,000 and is anticipated to increase at 4.5% per year.

EXHIBIT 7 – GLOSSARY OF TERMS:

This glossary summarizes the technical terms contained in this report.

1. Actuarial Accrued Liability

That portion of the Actuarial Present Value of plan benefits that is not provided for by future employer Normal Costs or employee contributions.

2. Actuarial Assumptions

Assumptions as to the occurrence of future events affecting the Retirement System such as:

- Rates of investment returns
- Increases in a member's salary
- Inflation
- The probability of mortality, turnover, disablement
- Retirement at each age and other relevant items

3. Actuarial Cost Method

A procedure for allocating the Actuarial Present Value of pension plan benefits between Normal Cost and Actuarial Accrued Liability.

4. Actuarial Present Value

The single sum amount required at the valuation date that is required to provide for anticipated future events based upon the terms of the plan and the Actuarial Assumptions.

5. Forecast

A projection of future benefit payments or contribution requirements based upon the terms of the plan, the current asset amounts, the Actuarial Assumptions, and additional assumptions as to the replacement of terminating employees with new employees.

6. <u>Normal Cost</u>

That portion of the Actuarial Present Value of future benefits that is assigned to the current year.

7. <u>Unfunded Actuarial Accrued Liability</u>

That portion of the Actuarial Accrued Liability that is not provided for by current actuarial value of assets.

8. <u>Valuation Method</u>

The method used to divide the cost of future benefits among the Actuarial Accrued Liability, the current year's Normal Costs, and future years' Normal Costs. The resulting current funding requirement is then determined as the current year's Normal Cost plus the payment necessary to amortize the Unfunded Actuarial Liability.

9. <u>Vested Liability</u>

That portion of the Actuarial Present Value of Accrued Benefits that a member would be entitled to if the member terminated employment with the employer as of the valuation date.

CERTIFICATION:

This report fairly represents the actuarial position of the Town of Watertown Retirement System contributing as of January 1, 2006, in accordance with generally accepted actuarial principles applied consistently with the preceding valuation. In our opinion, the actuarial assumptions used to compute actuarial accrued liability and normal cost are reasonably related to plan experience and to reasonable expectations, and represents our best estimate of anticipated plan experience.

Buck Consultants, LLC

Daniel W. Sherman, ASA, MAAA
Enrolled Actuary No. 05-4086

November 2006